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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,254	10/16/2001	Geoffrey Alan Ozin	13786	2248
293	7590	05/18/2005	EXAMINER	
Ralph A. Dowell of DOWELL & DOWELL P.C. 2111 Eisenhower Ave. Suite 406 Alexandria, VA 22314			CHEVALIER, ALICIA ANN	
			ART UNIT	PAPER NUMBER
			1772	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/977,254	OZIN ET AL.	

Examiner	Art Unit
Alicia Chevalier	1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 18 February 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-16, 87-100 and 102-104 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 1-16, 87-98 and 102-104 is/are allowed.
- 6) Claim(s) 99 and 100 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a) All    b) Some \* c) None of:
      1. Certified copies of the priority documents have been received.
      2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
      3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                     | Paper No(s)/Mail Date: _____.   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date: _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____.                                   |

**RESPONSE TO AMENDMENT**

1. Claims 1-16, 87-100 and 102-104 are pending in the application, claims 17-86 and 101 have been cancelled.
2. Amendments to the claims, filed on February 18, 2005, have been entered in the above-identified application.

***WITHDRAWN REJECTIONS***

3. The 35 U.S.C. §112 rejections of claims 99 and 100, made of record in the Office action mailed October 12, 2004, page 2, paragraph #6 have been withdrawn due to Applicant's amendment in the response filled February 18, 2005.
4. The 35 U.S.C. §102 rejection of claims 96 and 97 over Maenosono (US Patent No. 6,337,117), made of record in the Office action mailed October 12, 2004, pages 3-4, paragraph #7 has been withdrawn due to Applicant's amendment in the response filled February 18, 2005.
5. The 35 U.S.C. §103 rejection of claims 92-94 over Asher et al. (US Patent No. 6,014,246), made of record in the Office action mailed October 12, 2004, pages 4-5, paragraph #8 has been withdrawn due to Applicant's amendment in the response filled February 18, 2005.

***REJECTIONS***

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 102***

7. Claims 99 and 100 are rejected under 35 U.S.C. 102(e) as being anticipated by Cirelli et al. (U.S. Patent No. 6,392,787).

Regarding Applicant's claims 99 and 100, Cirelli discloses a photonic crystal structure (*col. 1, line 12*) comprising a substrate (*col. 3, line 7*) and a first colloidal photonic crystal (*cylinder of silicon dioxide, col. 3 lines, 18-43*) including an array of first colloidal particles of a first size arrayed on elongate (*figure 1H and 2*), parallel and spaced strips across a top surface of the substrate (*figure 1H*), and a second colloidal photonic crystal including an array of second array of second colloidal particles of a second size arrayed in elongate, parallel and spaced strips over top of the first array and being disposed substantially perpendicular to the first array (*figure 1H*). The first and second colloidal photonic crystals are deemed to exhibit optical Bragg diffraction since they are made of colloidal silicon dioxide (*col. 3 lines, 18-43*). The first and second colloidal particles are spherical colloidal particles having a preselected diameter in a range from 250 nm to about 2500 nm (*col. 3, line 35*).

***Potentially Allowable Subject Matter***

8. Claims 1-16, 87-98 and 102-104 are allowed.

***REASONS FOR ALLOWANCE***

9. The following is an examiner's statement of reasons for allowance:
- The prior art fails to teach or suggest the recited a composite material comprising a substrate having a surface relief pattern formed of surface features on a surface of the substrate

including any of closed indentation, closed channels and open and continuous channels of selected size and shape, and a well ordered colloidal photonic crystal formed of colloidal particles of selected size and shape self-assembled within each of the surface features in the surface relief pattern, and each colloidal photonic crystal exhibiting optical Bragg diffraction.

In sum, the prior art of record fails to teach or suggest composite material having all the features of the base claims.

10. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### ***ANSWERS TO APPLICANT'S ARGUMENTS***

11. Applicant's arguments in the response filed February 18, 2005 regarding the previous rejections of record have been considered but are moot since the rejections have been withdrawn.

#### ***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Chevalier whose telephone number is (571) 272-1490. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571) 272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1772

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alicia Chevalier

5/16/05